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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUL 9 1986

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: EPA Registration Numbers 3125-270 and 3125-305
(RCB #'s 805 and 806). Metribuzin on Sugarcane.
Sugarcane Processing Study Submitted for Reregistra-
tion.

FROM: Nancy Dodd, Chemist *Nancy Dodd*
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

THRU: Charles L. Trichilo, Ph.D., Chief
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

TO: Amy Rispin
Science Integration Staff
Hazard Evaluation Division (TS-769)

and

Robert Taylor, Product Manager #25
Fungicide-Herbicide Branch
Registration Division (TS-767)

Mobay Chemical Corporation, with a letter dated 12/4/85, resubmits a sugarcane processing study (Mobay Report #35198) which Mobay believes satisfies the sugarcane processing requirement for reregistration of metribuzin [4-amino-6-(1,1-dimethylethyl)-3-(methylthio)-1,2,4-triazin-5(4H)-one].

Also in the letter dated 12/4/85, the petitioner indicates that a tolerance has been established on sugarcane molasses at 2.0 ppm. The petitioner encloses a copy of the Federal Register Notice (43 FR 35915) dated 8/14/78. Page 15 of the Metribuzin Registration Standard lists the tolerance of sugarcane molasses at 0.3 ppm, as listed in 21 CFR 561.41. Page 147 of the Residue Chemistry Chapter indicates that the tolerance change from 0.3 to 2.0 ppm on sugarcane molasses had not been incorporated into the 21 CFR 561.41 at the time of the Registration Standard.

RCB acknowledges that the tolerance on sugarcane molasses for metribuzin and its triazinone metabolites is 2.0 ppm. The 21 CFR 561.41 should be revised accordingly.

The Metribuzin Registration Standard lists the following deficiency concerning sugarcane processing:

"Residues must be determined in molasses, refined sugar, and bagasse processed from sugarcane bearing measurable weathered residues of metribuzin, DA, DK and DADK. If residues are found to concentrate in refined sugar, an appropriate food additive tolerance must be proposed. The established food/feed additive tolerances for residues in molasses and bagasse will be assessed on receipt of the above-requested data".

The petitioner believes that Mobay Report No. 35198 satisfies the following requirements of Subdivision O of the Pesticide Registration Guidelines for processing for the reasons given below:

1. Field treatment according to commercial practice.

"The sugarcane used in the processing study was treated and harvested on a schedule that is consistent with the registered uses of SENCOR herbicide as depicted in the following tabular summary:

| | <u>Maximum Dosage/ Application (OZS AI/ACRE)</u> | <u>Allowable Total Dosage/Season (OZS AI/ACRE)</u> | <u>PHI</u> |
|--------------------------|--|--|-------------------------|
| <u>Registered Uses:</u> | | | |
| (1) Hawaii | 96 | 128 | 17 months (510 days) |
| (2) Louisiana & Texas | 48 | 144 | 60 days |
| (3) Florida | 32 | 32 | (not specified) |
| <u>Processing Study</u> | 128 | 384 | 176 days" |

"The Agency has residue data we submitted previously from studies in which sugarcane was harvested at various intervals (including one day) after treatment with SENCOR. Sugarcane sampled one day after treatment contained detectable residues of metribuzin and its metabolites. Total residues were in the range of 5 to 10 ppm (50 to 100 times greater than the 0.1 ppm tolerance). Since the shortest pre-harvest interval specified on accepted labeling is 60 days, it would not be appropriate, nor would it be acceptable based on guideline requirements, to use samples collected one day after treatment (and containing artificially high residue levels) for a processing study."

2. The processing procedure should simulate commercial practice.

The study was conducted by Great Western Sugar Company using a commercial process.

3. Preferably, the residue level in the raw agricultural commodity should be at or near the tolerance level.

"The established tolerance (40 CFR 180.332) for residues of metribuzin and its DA, DK, and DADK metabolites in raw sugarcane is 0.1 ppm. The sugarcane used in the processing study contained residues at a level of 0.09 ppm."

Note: The Registrant in Mobay Report No. 35198 reported a value of <0.12 ppm (including metribuzin, DADK, DK and DA).

4. Field treatment at exaggerated dosages may be required in order to obtain sufficient residue in the raw agricultural commodity to be suitable for use in processing studies.

"It was necessary to treat the growing sugarcane with an exaggerated rate of SENCOR in order to obtain the 0.09 ppm residue level, but this is consistent with the guidelines."

Mobay Report No. 35198 was discussed on p. 151 of the Residue Chemistry Chapter of the Metribuzin Registration Standard as follows:

"In one additional test, samples were taken from a field test 176 days after the last of three broadcast spray treatments of the 70% WP at 8 lb ai/A/application and processed into juice, sugar, syrup, molasses and bagasse. A sample of sugarcane collected after 176 days bore residues of <0.12 ppm [including metribuzin, DADK; and DK and DA each at <0.01 ppm (nondetectable)]. Residues in or on processed products (one sample each) were as follows: mixed juice, <0.12 ppm [including DA and DK each at <0.01 ppm (nondetectable)]; clarified juice, <0.13 ppm [including DA and DK each at <0.01 ppm (nondetectable)]; sugar, <0.04 ppm [including metribuzin, DA, DK and DADK each at <0.01 ppm (nondetectable)]; syrup, 0.63 ppm; molasses, 1.78 ppm; and bagasse, 0.37-0.43 ppm. Again since residues of metribuzin, DA, and DK were all nondetectable in the representative sample of the raw agricultural commodity, appropriate concentration factors for residues in processed products cannot be determined."

The available processing study indicates that residues in sugarcane of 0.09 ppm increase to 1.78 ppm in molasses (20X) and to 0.43 ppm in bagasse (5X). No concentration was observed in sugar.

Conclusions and Recommendations

1. RCB concludes that the available sugarcane processing study is adequate. This processing study indicates a concentration of 20X for molasses, 5X for bagasse, and none for refined sugar. Since the tolerance on sugarcane is 0.1 ppm, appropriate food additive tolerances would be 2.0 ppm for molasses and 0.5 ppm for bagasse.

RCB concludes that the deficiency concerning sugarcane processing which was identified in the Metribuzin Registration Standard is resolved.

2. RCB acknowledges that the tolerance on sugarcane molasses for metribuzin and its triazinone metabolites is 2.0 ppm. The 21 CFR 561.41 should be revised accordingly.

3. Refer to the Metribuzin Registration Standard for other deficiencies that need to be resolved.

cc:RF, Circu, Reviewer-NDodd, SF (for Metribuzin), PM #25,
Metribuzin Registration Standard File, W. Boodee, PMSD/ISB-
Eldredge
RDI:JHOnley:6/16/86:RDSchmitt:6/17/86
TS-769:RCB:RM810:NDodd:wh:X1681:CM#2:7/7/86

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